exhibited, which demonstrated the great increase of resistance with the velocity (it being with a light train four times as much at sixty miles an hour as at ten miles an hour), to the calculation of the power of the locomotive engines, to the propelling power, which he contended must be provided in the atmospheric system beyond that which had been calculated upon as necessary, to the questions of gauge and of gradient; on all these points, the law which at present appeared to be established, had, he stated, the most direct and important bearing, and the doctrines and modes of calculation till recently in use as regarded propulsion on railways, would, he believed, require great modification. The paper was illustrated by several tables and diagrams.

A gas burner of a novel construction was exhibited. The principal feature was the introduction of a stream of air to the centre of the flame, by means of a hollow button in the middle of the burner. The air passing up through the hollow stem of the button, was heated, and passed out by two series of five holes around the periphery, and impinging with more force with the flame of the gas curved it outwards in the shape of a tulip, while the oxygen of the air mingling with the carburetted hydrogen gas, produced a very perfect combustion. It was stated, that in comparing the consumption of these burners with that of the concentric ring burner, and trying the power of the two lights with the photometer, the new burner gave a better light with a saving of rather better than one-third of the gas consumed. It was, we believe, called the universal burner, and was introduced by Mr. McNeil.

DR. CARUS ON THE "CASTLES" OF THE ENGLISH.

This intelligent foreigner, in treating of England and "the remarkable and highly inventive race of men" who dwell within its sea-girt limits, very naturally associates the separation of our domiciles with the reservation of our manners, and he might, perhaps, have added, with the insulation of our soil.

"Up to the present moment," says he, "the Englishman still perseveres in striving after a certain individuality and personal independence, a certain separation of himself from others, which constitutes the foundation of his freedom. This, too, was completely an ancient German tendency, which led our remote ancestors to prefer the rudest and most inconvenient, but isolated homesteads, to the more convenient and refined method of life in aggregation: it is this that gives the Englishman that proud feeling of personal independence, which is stereotyped in the phrase, 'Every man's house is his castle.' This is a feeling which cannot be entertained, and an expression which cannot be used, in Germany or France; in which countries ten or fifteen families often live together in the same large house. The expression, however, receives a true value when, by the mere closing of the house-door, the family is able, to a certain extent, to cut itself off from all communication with the outward world, even in the midst of great cities. In English towns or villages, therefore, one always meets either with small detached houses, merely suited to one family, or apparently large buildings extending to the length of half a street, sometimes adorned like palaces on the exterior, but separated by partition walls internally, and thus divided into a great number of small, high houses, for the most part three windows broad, within which, and on the various storys, the rooms are divided according to the wants or convenience of the family: in short, therefore, it may be properly said that the English divide their edifices perpendicularly into houses, whilst we Germans divide them horizontally into floors. In England, every man is master of his hall, stairs, and chambers; whilst we are obliged to use the two first in common with others, and are scarcely able to secure ourselves the privacy of our own chamber, if we are not fortunate enough to be able to obtain a secure and convenient house for ourselves alone."

DESTRUCTION OF AN ANCIENT CHAPEL.—The picturesque little chapel opposite the toll-bar at Kingland, is now being unroofed, preparatory to its destruction, by the sanction of the governors of Bartholomew's Hospital.

New Books.

A Treatise on Railway Surveying and Leveling. By JOHN QUESTED, *Surveyor.* London; Relfe and Fletcher, 1846.

"The increasing number of railroad undertakings," says Mr. Quested, in his preface, "having given rise to an unprecedented demand for practical surveyors, has caused many young persons to embrace that profession, who were balancing within their own minds to what pursuit to turn their attention.

Many who wish to do so, may not have the means within their power of gaining instruction from practical men; and almost all the works on surveying which give a theoretical knowledge of this art to the extent required by railway surveyors, are elaborate, and so mixed up with other subjects, that the pupil, on opening the book, is startled at the vast quantity of matter he must wade through, in order to acquire that instruction he wishes."

His object has been to clear the road a little, by avoiding extraneous matter, and confining himself to practical work; and in this he has certainly succeeded to a considerable extent. His little book will be found of great service, by all who wish to acquire an insight to the art and mystery of surveying, and have not a long time to acquire it in. His closing piece of advice to railway surveyors may be usefully repeated:—

"Let me earnestly advise his laying down every night all the lines he has surveyed in the day; let no *fatigue*, no *disinclination*, and no *invitation* suffer a departure from this principle. The advantage of following it is obvious; for, as the surveyor daily proceeds along the line, he necessarily becomes more and more distant from his first work, and if the plotting he neglected for some days, and it should happen that an error had been made at the onset, much trouble, great loss of time, and galling mortification must ensue, before the error can be rectified; miles must perhaps be retraced; and even on the arrival at the place where the mischief had occurred, all visible signs of stations, &c. &c. might have disappeared. Besides, the handsome remuneration generally given to railroad surveyors, should act as a stimulus for conscientious exertion, in the performance of a duty at once onerous and important. On their correctness depends in a great measure the fate of the bill in committee, and in its ultimately receiving the sanction of the Legislature. Inaccuracies detected by an opposing party tend to the rejection of the line; and in its overthrow are destroyed the hopes, both commercial and pecuniary, of the projectors."

The Elements of Architecture. By the Rev. J. W. MC GAULEY. Dublin, McGlashan; London, Orr and Co.

THIS will be found a very useful introduction to classic architecture, in a condensed and cheap form. The technical terms are defined clearly at the foot of each page, and render it a glossary as well as a connected treatise. "You are to observe," says our author with justice, "that technical language and rules, if you would make them really useful, must be not only *distinctly understood*, but also learned and *remembered* as familiarly as the alphabet, and employed *constantly*, and with scrupulous exactness; otherwise technical language will prove an incumbrance instead of an advantage, just as a suit of clothing would be, if instead of putting them on and *wearing* them, you were to carry them about in your hand."

PORTRAIT OF MR. WELBY PUGIN.—Many of our readers remember Mr. Herbert's portrait of this distinguished architect, in the Royal Academy Exhibition, last year, and will be glad to hear that the able artist has himself engraved it for distribution. It is published by Messrs. Hering and Remington, of Regent-street, in whose establishment will be found a good collection of modern foreign works on architectural ornament.

ST. ALKMUND'S NEW CHURCH, DERBY.—The top stone of this spire was raised on Wednesday last. The spire, with vane, is 214 feet high, being 28 feet higher than All Saints.

Correspondence.

KENTISH RAG-STONE.

SIR,—In THE BUILDER of May 23rd, I perceive you introduce some extracts from Mr. Whichcord's work on "Kentish Rag;" I would beg to observe, that by the list of prices quoted therefrom, the public are likely to be led into error, as the price of the material is in a great measure regulated by the supply and demand; in fact, I can speak from experience, as I know that last year the price was much increased, by freights being higher, owing to the great demand for barges, and consequent rise in freight; and with regard to dressed stone, such as headers, &c., should there be many required, they would immediately rise in price, as there are not many quarries whence they can be procured in any quantity, and even those could not provide more than their usual quantity, without sustaining loss in their portion of the stone made use of for other purposes; therefore there is every reason to suppose that there would be an advance in price should that be the case.

From your extract from Mr. W.'s work the inference would be, that the price would apply to the stone which he terms the best, viz. the "Boughton stone;" now that is not the case, as the shortest distance it could be brought to be shipped, would be nearly four miles; consequently the land carriage would prevent its being delivered in London at the prices named; it must therefore only apply to those quarries contiguous to the river, and from which very good stone can be procured.

My reason for troubling you is, that I thought parties who were likely to use this stone would, probably, in making estimates, take those prices as a guide, which they might afterwards find erroneous.

I have often felt surprised, that Kentish rag has not been more generally used in its rough state, as any quantity of it could be procured, at a very low price in comparison to brick; in fact, about one-third, labour included; and for foundations, garden walls, areas, &c., it is most admirably adapted; and there can be no question of its strength and durability. I can only account for it by the public not being sufficiently acquainted with it; but when that is the case, I have no doubt it will be used most extensively.

If you think the foregoing remarks worthy of your insertion, I shall feel obliged, and remain, Sir, yours respectfully,

June 1, 1846. A SUBSCRIBER.

THE WORKS IN ELY CATHEDRAL.

SIR,—In an article in the BUILDER of to-day, under the head of "Ely Cathedral," an apprehension is expressed that "certain arches in the western tower are being cut away, and that their removal may, very probably, endanger the fabric." Should you not receive during the coming week, any official or authorized communication from parties able to inform you more conclusively as to the facts, I will just mention what occurred while I was at the cathedral, as a passing visitor, about a month since. Perceiving that workmen were engaged in the first story of the tower, I was, upon inquiry, informed by the verger, that some modern plaster arches (mock groining in fact) not half a century old, were being removed, to throw open the interior of the tower to view from the floor of the church. I was not long in doubt as to the general accuracy of the statement; for while there, much of the lath and plaster was knocked down, and enveloped the entire west end of the cathedral in clouds of dust.

Having entered with a thoroughly wet coat, from a heavy shower of rain, I felt no inducement to verify the report made to me, by a minute investigation, which, under my then circumstances, would have been attended with very disparaging effects upon black cloth, so I made a hasty, though a reluctant, retreat; from these data, however, I am really induced to hope, for the credit of the conservators of this splendid temple, that the complainants' lament in the present instance, if it do not end in smoke, will end in this dust, and nothing more. With every respect, Mr. Editor, notwithstanding, for the right good conservative principles you evince for our time-hallowed structures, allow me to subscribe myself your friend and well-wisher,

London, May 30, 1846. MINIMUS.

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